

Abstract of the Disclosure

An insulating layer having a BPSG layer, a semiconductor device and methods for fabricating them. After preparing an oxidizing atmosphere using an oxygen gas, a first seed layer is formed with a tetraethylorthosilicate (TEOS) and the oxygen gas.

5 Thereafter, a second seed layer, used to form an insulating layer capable of controlling an amount of a boron, is formed by means of using a triethylborate (TEB), the TEOS and the oxygen gas. Then, the insulating layer having a BPSG layer is formed using the TEB, a triethylphosphate, the TEOS and an ozone gas. About 5.25 to 5.75% by weight of the boron and about 2.75 to 4.25% by weight of the phosphorous are added to the
10 insulating layer.